

AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A fuel cell unit comprising:

a plurality of fuel cells, said fuel cells each comprising a plurality of power generation units arranged on a same plane, and electrically connected in series, said power generation units each including an anode, a cathode, and an electrolyte interposed between said anode and said cathode, wherein the plurality of power generation units are formed from a row of a plurality of anodes disposed adjacent to a row of a plurality of cathodes;

a plurality of intermaterial sections provided around each anode and each cathode;

a power generation circuit for connecting said fuel cells to a load;

a switching mechanism for selectively connecting said fuel cells in parallel to said power generation circuit;

first and second metal diffusion layers provided on both surfaces of said power generation units,

wherein sections of the first metal diffusion layer corresponding to said intermaterial sections provided around each anode and each cathode:

electrically couple a first anode to a first cathode, wherein the first anode is adjacent to the first cathode; and

electrically insulate a second anode from a second cathode, wherein the second anode is adjacent to the second cathode; ~~and~~

wherein sections of the second metal diffusion layer corresponding to said intermaterial sections provided around each anode and each cathode:

electrically insulate ~~the~~ a third anode from ~~the~~ a third cathode; and

electrically couple ~~the~~ a fourth anode to ~~the~~ a fourth cathode; and

wherein:

a first of the power generation units comprises the first anode and the third cathode;

a second of the power generation units comprises the first cathode and the third anode;

a third of the power generation units comprises the second anode and the fourth cathode;

a fourth of the power generation units comprises the second cathode and the fourth anode.

2. (Original) A fuel cell unit according to claim 1, wherein each of said fuel cells is connected to a variable resistor.

3. (Original) A fuel cell unit according to claim 1, wherein said fuel cell further including:
at least one first output terminal connected to one of said anode and said cathode; and
a plurality of second output terminals connected to the other of said anode and said cathode for connecting different numbers of said power generation units in series between said first output terminal and said second output terminals, respectively, wherein
said switching mechanism selectively connects one of said second output terminals to said first output terminal.

4. (Canceled)

5. (Currently Amended) A fuel cell system comprising;

a plurality of fuel cell units each formed by stacking a plurality of fuel cells together, said fuel cells each comprising a plurality of power generation units arranged on a same plane, and electrically connected in series, said power generation units each including an anode, a cathode, and an electrolyte interposed between said anode and said cathode, wherein the plurality of power generation units are formed from a row of a plurality of anodes disposed adjacent to a row of a plurality of cathodes;

a plurality of intermaterial sections provided around each anode and each cathode;

a power generation circuit for connecting said fuel cell units in parallel to a load;

a switching mechanism for selectively connecting said fuel cell units to said power generation circuit;

first and second metal diffusion layers provided on both surfaces of said power generation units,

wherein sections of the first metal diffusion layer corresponding to said intermaterial sections provided around each anode and each cathode:

electrically couple a first anode to a first cathode, wherein the first anode is adjacent to the first cathode; and

electrically insulate a second anode from a second cathode, wherein the second

anode is adjacent to the second cathode; ~~and~~

wherein sections of the second metal diffusion layer corresponding to said intermaterial sections provided around each anode and each cathode:

electrically insulate ~~the~~ a third anode from ~~the~~ a third cathode; and

electrically couple ~~the~~ a fourth anode to ~~the~~ a fourth cathode; and

wherein:

a first of the power generation units comprises the first anode and the third cathode;

a second of the power generation units comprises the first cathode and the third anode;

a third of the power generation units comprises the second anode and the fourth cathode;

a fourth of the power generation units comprises the second cathode and the fourth anode.

6. (Original) A fuel cell system according to claim 5, further comprising:

a fuel gas supplying mechanism for supplying a fuel gas to said fuel cell units in parallel;
and

an oxygen-containing gas supplying mechanism for supplying an oxygen-containing gas to said fuel cell units in parallel,

wherein each of said fuel gas supplying mechanism and said oxygen-containing gas supplying mechanism have a valve for each of fuel cell units for stopping supply of said fuel gas and said oxygen-containing gas.

7. (Original) A fuel cell system according to claim 6, wherein first and second pumps are connected in parallel to said fuel gas supplying mechanism and said oxygen-containing gas supplying mechanism, and said first pumps supply predetermined amounts of said fuel gas and said oxygen-containing gas corresponding to a predetermined electrical energy supplied to said load and said second pumps supply small amounts of said oxygen-containing gas and said fuel gas corresponding to a small amount of electrical energy supplied to said load.

8. (Original) A fuel cell system according to claim 5, further comprising a coolant supplying mechanism for supplying a coolant to said fuel cell units in parallel,

wherein said coolant supplying mechanism has flow regulators for regulating a flow amount of said coolant supplied to each of said fuel cell units.

9. (Original) A fuel cell system according to claim 8, wherein a first pump and a second pump are connected in parallel to said coolant supplying mechanism, and said first pump supplies a predetermined amount of said coolant corresponding to a predetermined electrical energy supplied to said load and said second pump supplies a small amount of said coolant corresponding to a small amount of electrical energy supplied to said load.

10. – 18. (Canceled)

19. (Previously Presented) A fuel cell unit according to claim 1, said fuel cell further including:

a resin insulator provided in said metal diffusion layer, between predetermined power generation units.

20. (Previously Presented) A fuel cell system according to claim 5, said fuel cell further including:

a resin insulator provided in said metal diffusion layer, between predetermined power generation units.

21. (Canceled)

22. (Canceled)